SANDIA REPORT
SAND2008-12461246
Unclassified Unlimited Release
Printed February 2008

Supersedes SAND2008-124612461659
Dated March 2007

Sandia National Laboratories, California Waste Management Program Annual Report
February 2008

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National Nuclear Security Administration under Contract DE-AC04-94AL85000.

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Waste Management Program Annual Report
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ABSTRACT

The annual program report provides detailed information about all aspects of the Sandia National Laboratories, California (SNL/CA) Waste Management Program. It functions as supporting documentation to the *SNL/CA Environmental Management System Program Manual*. This annual program report describes the activities undertaken during the past year, and activities planned in future years to implement the Waste Management (WM) Program, one of six programs that supports environmental management at SNL/CA.

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Tables

0 Summary of Document Changes

Significant changes made to the March 2007 update of the Waste Management Program Report are summarized in Table 0-1.

Table 0-1 Summary of Significant Changes to the Waste Management Program Report

Section	Page	Change
0	6	Summary of Document Changes updated
3.4	14-15	Expiration/Effective Dates updated in Table 3.1
4.2	16	OP472266 document list updated
7.1	26	Program Risk Assessment narrative updated
8.1	27	8.1 Follow-up on 2006 Program Assessments updated
App. B	33-38	Waste Management Program Risk Assessment updated
App. D	41-52	Waste Management Program Self-Assessment updated
Various	Various	Facility name updated to Waste Management Facility (WMF)

1 Program Description

The Waste Management (WM) Program is one of six programs under the Environmental Management Department at SNL/CA. The program oversees the management of hazardous, radioactive and mixed waste at SNL/CA. The WM Program is part of the corporate Sandia (SNL) WM Program. It is partially directly funded in FY2007 through the National Nuclear Security Administration/Department of Energy (NNSA/DOE) Readiness and Technical Base Facilities Budget (RTFB), supported through the WM Project managed at Sandia National Laboratories/New Mexico (SNL/NM), and partially funded through a service center chargeback of the WM customers at SNL/CA.

This program description provides detailed information about all aspects of the WM Program activities. It functions as supporting documentation to the *SNL/CA EMS Program Manual.* The Program Description is updated annually to reflect the dynamic nature of program operations, accomplishments, and goals.

1.1 Hazardous Waste Management Process

The effective management of hazardous waste requires a strong partnership between the hazardous waste generators and WM personnel. Under the Resource Conservation, and Recovery Act (RCRA) and the California Health and Safety Code (H&SC) all hazardous waste generators are required to properly characterize, label, store, and dispose of their waste. Hazardous waste at SNL/CA includes chemical waste.

The management of hazardous waste begins with the process and personnel that generate the waste. The generator has knowledge of the process that generated the waste and the material composition of the waste. The waste is characterized by the generator, usually by process knowledge, before the waste is picked up by WM personnel. Generators work with WM personnel to package and store waste correctly for collection and transfer to the Waste Management Facility (WMF, Buildings 961/9611). Once the waste meets the Waste Acceptance Criteria, the waste is brought into the WMF and it is managed according to regulatory

requirements appropriate for that specific waste stream. The waste is eventually packaged at the WMF to meet all Department of Transportation (DOT) requirements for transport to the off-site Treatment, Storage and Disposal Facility (TSDF). Shipments are accompanied by a uniform hazardous waste manifest and Land Disposal Restriction (LDR) certifications, as needed. Receipts for wastes received at off-site waste disposal facilities are returned to SNL/CA to document transfer on the signed manifest copy from the TSDF and ultimate disposition of waste documented on the Certification of Destruction from the TSDF.

The Waste Information Management System (WIMS) is a corporate information system that tracks the management of hazardous waste on-site from cradle-to-grave. The generator of the hazardous waste initiates a Waste Description and Disposal Request (WDDR) in WIMS. This allows the generator to print an electronic waste tag to place on the waste container. After the container is considered full by the generator, the generator submits the WDDR electronically to WM personnel for review. WM personnel review and approve the WDDR and the waste is picked up and transferred to the WMF. WM personnel use the WIMS to track the waste into the WMF to its temporary storage location. WIMS also generates the shipping documentation and the hazardous waste manifest. The Land Disposal Restrictions (LDR) document is hand prepared by the WM personnel to complete the document package for the waste to be transported offsite to a TSDF.

1.2 Radioactive and Mixed Waste Management Process

The oversight and management of the SNL/CA Radioactive Waste Management Program continues to be transitioned to SNL/NM Radioactive Waste/Nuclear Material Disposition Department. The OP 472236 "Management of Low-Level Radioactive and Mixed Waste at SNL/CA" approved in March 2007, reflects the changes due to the transition and replaces OP 471660 "Low Level Radioactive Waste Shipments". SNL/NM's Regulated Waste/Nuclear Material Disposition Department (RWNMDD) will provide the program oversight and direct the shipment of LLW and MW from SNL/CA. SNL/CA Radiation Protection (RP) Program personnel will support the on-site management and support the activities necessary to ship the LLW and MW from SNL/CA. The official transition is scheduled for Spring 2008.

The management of radioactive and mixed waste also requires a strong partnership between the radioactive/mixed waste generators and WM personnel. Waste that is radioactive at SNL/CA includes both low-level radioactive waste and mixed waste. Under the Atomic Energy Act (AEA), low-level radioactive waste is defined as radioactive waste that is not high-level radioactive waste, spent nuclear fuel, transuranic waste, radioactive by-product waste, or naturally occurring radioactive materials. Mixed waste has radioactive constituents and contains hazardous chemical constituents. Under DOE Order 435.1 *Radioactive Waste Management* all radioactive and mixed waste generators must manage their radioactive and mixed waste in a manner that protects the environment and protects the worker and public health and safety.

The management of radioactive and mixed waste begins with the process and personnel that generate the waste. The generator has the most knowledge of the process that created the waste and the material composition of the waste, and is responsible for the characterization of the waste before it is transferred to WM. The radioactive waste is characterized by on a Disposal Request

(DR) by the generator. Once the waste is adequately characterized to meet the acceptance criteria of the WMF, the waste is picked up and transferred to the facility. The waste is then packaged and certified by the waste certification official for shipment. After the certification is completed, the waste is transported to a TSDF for permanent disposal.

1.3 Transportation of Hazardous and Radioactive Waste On-site

The WM Program personnel pick up hazardous and radioactive waste from the generator's location and transport it to the WMF. The waste must be transported onsite in accordance with DOE Order 460.2A *Departmental Materials Transportation and Packaging of Management* and the SNL Transportation Safety Document.

1.4 Medical Waste Management and Transportation Process

SNL/CA accumulates medical waste at the on-site Medical Facility, (Building 925), where it is picked up for transportation to an off-site TSDF. By permit, medical waste cannot be stored at the WMF.

1.5 Waste Management Facility

SNL/CA operates an on-site RCRA Part B permitted storage facility for hazardous waste and mixed waste. By design, the WMF also stores low-level radioactive waste. The planned lengths of time for storage at the WMF cannot exceed one year unless an extension is approved by the regulating authority. The facility consists of two buildings. The low-level radioactive and mixed waste is stored in Building 961 as shown in Figure 1-1 and the hazardous waste is stored in Building 9611 as shown in Figure 1-2.

Figure 1-1 Waste Management Facility Building 961

Figure 1-2 Waste Management Facility Building 9611

2 Program Drivers

Environmental compliance drivers include laws, regulations, orders, directives and other corporate and site-specific requirements. The drivers that are applicable to the WM Program are listed in Table 1-1.

2.1 Compliance Driver Monitoring Process

The WM Program uses a variety of sources to stay current on applicable compliance drivers. The primary source used is the SNL corporate notification service provided by the legal staff. SNL legal monitors DOE requirements and federal, state, and local government publications for regulatory issues applicable to SNL operations. These notifications are then reviewed for applicability to SNL/CA operations. The WM Program also receives information on regulatory changes from additional sources. These include direct communication with DOE and regulating agencies, and periodic review of agency web sites. New requirements are incorporated into program activities and communicated to the site through electronic notifications, the ES&H

Interdisciplinary Team (IDT) process, self-assessments, targeted presentations and program documents.

During 2007, no significant changes occurred in compliance drivers applicable to WM Program responsibilities.

The WM Program is periodically audited by DOE, SNL, Lockheed Martin and other external regulating agencies. Under the Nevada Test Site Waste Acceptance Criteria (NTSWAC), DOE Nevada is free to audit the Low Level Waste (LLW) program at any time and generally conducts announced audits every two years. Under California law, the state of California Department of Toxic Substances Control (DTSC) is free to audit the program at any time and conducts unannounced audits annually. Under California law, the Alameda County Department of Environmental Health is free to audit the tiered-permit program and the medical waste program at any time and also conducts unannounced audits every three years.

The WM Program Lead communicates with DOE/NNSA/SSO (SSO) counterparts regularly to keep them informed of issues and trends of importance to the program. WM Program staff at SNL/CA work together with the SNL/NM counterparts and DOE/NNSA/SSO to resolve concerns and to develop effective approaches to program implementation. The WM Program and SSO maintain an open and cooperative relationship.

Table 2-1 Compliance Drivers for the Waste Management Program

Driver	Summary	Regulating Authority
Federal Laws		
Resource Conservation and Recovery Act (RCRA)	RCRA regulates the generation, treatment, storage, and disposal of hazardous chemical waste, non-hazardous chemical waste, non-hazardous solid waste and hazardous or petroleum products stored in Underground Storage Tanks (UST).	California Environmental Protection Agency (CalEPA)
Toxic Substances Control Act (TSCA)	TSCA regulates a few wastes such as Poly Chlorinated Biphenyls (PCBs) and Asbestos.	EPA
Federal Facility Compliance Act (FFCA)	FFCA waives sovereign immunity with respect to RCRA for federal facilities; gives EPA and authorized states the authority to conduct annual inspections of federal facilities; and establishes requirements for management of hazardous and mixed waste.	EPA
Atomic Energy Act (AEA)	AEA assures the proper management of nuclear materials and radioactive waste.	DOE
Federal Regulations		
40 CFR 260-280	Implementing regulations for managing waste under RCRA.	EPA

Driver	Summary	Regulating Authority
49 CFR, subchapter C, Parts 171-178	Implementing regulations for transporting waste.	DOT
29 CFR 1910.120	Implementing regulations for the safety and health of hazardous waste workers by setting and enforcing standards.	OSHA
DOE Directives		
DOE Order 435.1, Radioactive Waste Management	Establishes requirements to manage radioactive waste in a manner that protects the environment, and worker and public health and safety.	DOE
DOE Order 5400.5, Radiation Protection of the Public and the Environment	Establishes radiation protection standards for DOE operations so that radiation exposures to members of the public and the environment are as low as reasonably achievable (ALARA) and maintained within established limits of the order.	DOE
DOE Order 460.2B Departmental Materials Transportation and Packaging Management	Establishes requirements and responsibilities for management of DOE materials including waste, transportation and packaging.	DOE
California Laws		
California Health and Safety Code, Div 20, Ch 6.5, §§ 25100-25250.) Hazardous Waste Control Law	Hazardous Waste Control Law provides a separate regulatory framework for hazardous waste management in California. The state law incorporates all RCRA requirements and imposes additional requirements that are stricter than RCRA standards.	Department of Toxic Substances Control (DTSC)
(California Health and Safety Code, Division 104, Part 14, §§ 117600-118360) Medical Waste Management Act	Medical Waste Management Act provides for regulation of medical waste generators, transporters, and treatment facilities.	Alameda County Department of Environmental Health
California Regulations		
Title 22 California Code of Regulations (CCR)	Implementing regulations for hazardous waste management, incorporating all RCRA requirements and imposes additional stricter standards.	DTSC

3 Operational Controls

The WM Program uses technical work documents, administrative and engineered controls and specialized equipment as operational controls. In addition, the WM Program operates under several Permits that specify operational controls.

3.1 Hazardous Waste Facility Permit

The primary driver for the WM Program is the California Environmental Protection Agency, Department of Toxic Substances Control (CAL/EPA, DTSC) Waste Management Facility Permit. The permit includes the Hazardous Waste Operations Plan (Part B Permit) for the Waste Management Facility (Bldg. 961 and Bldg. 9611) and all additional storage outside of the actual facility buildings.

The Part A Application is the SNL/CA application to permit the operation. The Part B Permit incorporates the waste acceptance criteria, as defined by Federal and State Codes, and quantities allowed in each building and the bays within Bldg. 9611. It also defines waste analyses and sampling procedures, chain of custody procedures, certification and transportation requirements. The permit also incorporates specific information on the physical equipment used to handle or transport hazardous waste.

3.2 Hazardous Waste Tiered Permits

SNL/CA has several tiered permits with the Alameda County Department of Environmental Health. A tiered permit authorizes a facility to treat or store hazardous waste, usually a specific waste stream, but does not require a hazardous waste permit under federal law.

SNL/CA has the following tiered permits:

- Two permit by rule permits (both in Building 910) and
- Two conditionally authorized permits for neutralization (at the sewer outfall and Building 968).

3.3 Medical Waste Permits

SNL/CA has two medical waste permits with Alameda County Department of Environmental Health. The medical waste permits authorize a facility to manage medical waste. SNL/CA is registered as a small quantity generator with no onsite treatment occurring at the medical facility (Building 925). SNL/CA is also registered as a small quantity generator with onsite treatment occurring at Building 968.

3.4 Administrative Controls

The WM Program prevents accidents, incidents, exceedances and violations through both administrative controls and engineering controls. The administrative controls are various Technical Work Documents (TWD) which include (but are not limited to) Corporate Process Requirements (CPR), Operating Procedures (OP), Preliminary Hazard Screening (PHS), Safe Work Permits (SWP), activity-specific plans, department guidance and other management directives. The WM program always follows the most recent version of the specific TWD. The TWDs applicable to the WM Program are presented in Table 3-1.

Table 3-1 Technical Work Documents Applicable to Waste Management

TITLE	
OPERATING PROCEDURES	**Expiration Date**
AP8000000 Building Security Plan for the Waste Management Facility (WMF), Buildings 961 and 9611	January 22, 2009
AP800008 SNL/CA Environmental Program Representative (EP Rep) Program	July 31, 2009
OP471125 Nonconforming Item Identification and Tracking	November 20, 2010
OP471131 Data Validation and Verification for the Environmental Operations	August 19, 2008
OP471310 Control of Samples by the Environmental Operations Department	November 29, 2009
OP471613 Verification of Laboratory Chemical Analysis Data	January 14, 2008
OP471619 Building 961 LECS Sump Operation	September 13, 2008
OP471636 Shipment of Hazardous Waste/Hazardous Material from Building 9611, the Hazardous Waste Treatment and Storage Facility	August 25, 2008
OP471787 Hazardous Waste Operations at SNL/CA	June 1, 2009
OP472236 Management of Low-Level Radioactive and Mixed Waste at SNL/CA	February 28, 2010
STANDARD OPERATING PROCEDURE	
SP473525 Standard Operating Procedure for the Hazardous Waste Facility, Bldg. 9611	September 6, 2009
SP485007 Low-Level Radioactive Waste, Bldg. 961	November 13, 2010
PRIMARY HAZARD SCREENING	
SNL7A00686-014 Waste Management Program at SNL/CA	August 27, 2008
ES&H MANUAL SECTIONS	**Effective Date**
ES&H Manual Section 10A Pressurized Drums	November 9, 2004
ES&H Manual Section 10D Polychlorinated Biphenyl (PCBs) Management	March 26, 2007
ES&H Manual Section 10F Oils, Greases, and Fuels	November 9, 2006
ES&H Manual Section 10L Management of Excess Metallic Lead	April 25, 2006
ES&H Manual Section 19 Waste Management	January 31, 2008
ES&H Manual Section 19A Hazardous Waste Management	January 16, 2008
ES&H Manual Section 19B Radioactive Waste Management	June 15, 2006
ES&H Manual Section 19C Mixed Waste Management	June 15, 2006
ES&H Manual Section 19D Radioactive Material Management Areas (RMMAs)	August 5, 2003
ES&H Manual Section 19E Treatability Studies for Hazardous and Mixed Waste	September 30, 1997
ES&H Manual Section 19F Other Waste	May 8, 2006
ES&H MANUAL SUPPLEMENTS	
GN470075 Guidelines for Waste Generators at SNL/CA	June 19, 2006
OTHER DOCUMENTS	
SNL Transportation Security Plan	April 6, 2006
SAND2008-124612468763 Biohazardous Waste Management Plan	January 2004
SAND2008-124612465882 Medical Waste Management Plan	December 2004
NTS Waste Acceptance Criteria DOE/NV-325-REV. 6-02	October, 2006

4 Documents Produced

The WM Program produces a large number of electronic and paper documents in the normal course of business. A description of the routine documents follows. Other non-routine documents are also generated during the year.

4.1 Data Management

The Waste Description and Disposal Request (WDDR) is the primary document the customer uses to request hazardous waste pickup and disposal. This is an electronic document accessed through the Waste Information Management System (WIMS) on the Sandia Restricted Network (SRN). The customer initiates the document and the WM personnel review and approve the forms prior to pickup. These forms produce the requisite documents for processing the waste (e.g., waste ID tags for the waste containers and the shipping documents). The WDDR information is maintained in the WIMS database on a corporate server at SNL/NM. In addition to the review and approval of the WDDRs, WM personnel and the Environmental Programs Representative train the customers and provide ongoing support as needed.

A similar process exists for radioactive waste. The Disposal Request (DR) is the primary document the customer uses to request radioactive waste pickup and disposal. This is an electronic document with primary generator support provided by WM personnel. The customer initiates the DR, the WM program personnel at SNL/CA and SNL/NM review and approve the forms and the pickup is done. The information is maintained in the RadTrack database on a corporate server at SNL/NM. In addition to the review and approval of the DRs, WM personnel and the Environmental Programs Representative train the customers and provide ongoing support as needed.

Examples of the electronic forms created by the databases are:

- Waste Description and Disposal Request (WDDR)
- Radioactive or Mixed Waste Disposal Request Form (DR)
- Uniform Hazardous Waste Manifest
- Lab Pack and Drum Content Forms- lab pack/drum inventory
- Emergency Response Guidelines Numbers
- Bill of Lading

4.2 Internal Documents

The WM operating procedures (OP) require specific documentation for Program management and to meet regulatory requirements. The types of documentation are listed below under each OP.

OP461613 Verification of Laboratory Chemical Analysis Data
Documents produced according to this OP are:

Chemical Analysis Report Verification Record Form
Chain-of-Custody Report
Applicable Limits List
Analysis Data Report

OP471619 Building 961 LECS Sump Operation
Documents produced according to this OP are:
Health Physics Survey Form
Analytical analysis package
Sump Logbook
Chain of Custody Record and Analytic Instructions
WDDR

OP471636 Shipment of Hazardous Waste/Hazardous Material from Building 9611, the Hazardous Waste Treatment and Storage Facility
Documents produced according to this OP are:
Hazards Communication Summary
Uniform Hazardous Waste Manifest (electronic form)
Lab Pack/Drum Inventory (electronic form)
SNL/CA Bill of Lading (electronic form)
Profile
Waste Analysis
Land Disposal Restrictions
DOT Exemption
Shipper
Purchase Requisition
Emergency Response Guides (electronic form)
Certificate of Disposal
SNL/CA Chemical Waste Shipment Checklist
SNL/CA Hazardous Waste ID Tag
Waste Storage Facility Operating Log, Containers
Waste Storage Facility Operating Log, Drums
SNL/CA Waste Transporter Vehicle Checklist
Empty Container Recycling, current year file

OP471787 Hazardous Waste Operations at SNL/CA
Documents produced according to this OP are:
Forklift Inspection Report
Waste Management Vehicle Inspection Report
Building 961 Inspection Report
Building 9611 Inspection Report
Monthly Inspection Verification Report
Compactor Log Sheet
Drum Compactor Log Sheet
Hazardous Waste Disposal Tag
Training Certificates or class enrollment records

Chain of Custody Record and Analytic Instructions
Chemical Analysis Report Verification record
Contract laboratory analytical results
Environmental Operations Emergency Response Record

OP472236 Management of Low-Level Radioactive and Mixed Waste at SNL/CA
Documents produced according to this OP are:
Radioactive and mixed waste disposal tags
Radioactive Waste Accumulation Sheets
SNL/CA LLW/MW Pickup Form
Photographs
Waste Information Management System Printouts
Scale Functional Check
Reject Tag
Nonconforming Item Tag

4.3 Document Control

Program documents and other technical work documents are managed in accordance with governing OPs and OP471347 *Administrative Procedures for Managing SNL/CA ES&H Recorded Information*.

Electronic documents such as the WDDR are maintained in WIMS but a paper information copy may be kept in the WMF for the convenience of the WM personnel while waste is in the facility. Once shipped, the paper documents are filed in the ES&H Record Center.

Electronic documents such as the DR are maintained in Radtrack but a paper information copy may be kept in the WMF for the convenience of the WM personnel while waste is in the facility. Once shipped, the paper documents are filed in the ES&H Record Center at SNL/NM or SNL/CA as approprite.

4.4 External Reports

Table 4-1 lists reports generated by the WM Program.

Table 4-1 Waste Management Reports

Document	Due Date	Frequency of Distribution	Distribution	Requirements
Annual Hazardous Waste Report	March 1	Annual	CA/EPS/DTSC	Regulatory
Biennial Generators Report	March 1	Every 2 years	CA/EPS/DTSC	Regulatory
Hazardous Waste Facility Permit	March 30, 2014	Every 10 years	CA/EPS/DTSC	Regulatory
Part B Permit Modifications	As needed	As needed	CA/EPS/DTSC	Regulatory
Transporter Permit	April 30	Annual	CA/EPS/DTSC	Regulatory
Site Treatment Tiered Report	30 days from receipt	Annual	CA/EPS/DTSC	Regulatory
Waste Minimization Certification	March 1	Annual	CA/EPS/DTSC	Regulatory

5 Approved Job Descriptions, Qualifications and Job Specific Training

Job assignments in the WM Program include Program Lead, Waste Program Engineer, Hazardous Waste Technician, Radioactive Waste Representative, and Field Chemist. Job descriptions and qualifications for each assignment follow. Appendix A provides a list of personnel supporting each job assignment. In general:

- The Department Manager overseeing WM is responsible for ensuring the completeness of qualification requirements as defined.
- The Waste Program Lead is responsible for verifying and ensuring that WM Program personnel are trained and qualified to perform their job responsibilities.
- WM personnel are responsible for maintaining their training as current and providing updated information (including completion certificates, cards, and course content information) to the designated technician within 20 working days after completion of their training or receipt of certification.

Before personnel may work independently in any of the Hazardous Waste Treatment and Storage Facilities, the individual must be qualified to work proficiently and safely. This is accomplished by completing and passing 40 hours of Hazardous Waste Operator Training to meet the requirements of 29 CFR 1910.120. Additionally, three days of on-site supervised training must be completed and documented.

5.1 Waste Program Lead

The Waste Program Lead directs the WM Program to assure SNL/CA compliance with EPA, OSHA, DOT, DTSC and DOE regulations and orders for hazardous, radioactive and mixed wastes by providing regulatory and permitting requirement assistance. The Waste Program Lead is the staff point-of-contact between SNL/CA WM and SNL/NM Waste Management programs in Organization 04139 - *Regulated Waste/Nuclear Material Disposition*. Additionally, the Waste Program Lead secures funding to support the required activities for WM operations on-site. Problem solving of technical issues relative to waste generation, minimization, waste treatment options, disposal and permitting are necessary. Regulatory and technical assistance is provided to researchers, maintenance and support personnel to implement the WM program.

Qualifications:
The Waste Program Lead should meet the following minimum requirements:

- B. S. degree in Environmental Management or equivalent (M. S. degree preferred)
- Member of Technical Staff/Contractor
- DOE "Q" Clearance
- Knowledge of hazardous and radioactive materials
- Working knowledge of the following:
  - DOT (49 CFR 171-178)
  - EPA (RCRA and 40 CFR 260-280)
  - OSHA (29 CFR 1910.120)

DTSC (H&SC and Title 22 CCR)
DOE Orders

Training:
The Waste Program Lead will also serve as a Waste Program Engineer and meet all the training requirements for that position (see below). The Waste Program Lead Backup is an administrative position similar to the Manager of Environmental Management Department and does not require any specific training.

5.2 Waste Program Engineer

The Waste Program Engineer supports the WM Program Lead to assure SNL/CA compliance with EPA, OSHA, DOT, DTSC and DOE regulations and orders for hazardous, radioactive and mixed wastes by providing regulatory and permitting requirement assistance. Additionally, the Waste Program Engineer solves problems of technical issues relative to waste generation, minimization, waste treatment options, disposal and permitting are necessary. Regulatory and technical assistance is provided to researchers, maintenance and support personnel to implement the WM program.

Qualifications:
The Waste Program Engineer should meet the following minimum requirements:
B. S. degree in Environmental Management or equivalent (M. S. degree preferred)
Member of Technical Staff/Contractor
DOE "Q" Clearance
Knowledge of hazardous and radioactive materials
Working knowledge of the following:
DOT (49 CFR 171-178)
EPA (RCRA and 40 CFR 260-280)
OSHA (29 CFR 1910.120)
DTSC (H&SC and Title 22 CCR)
DOE Orders

Training:
The Waste Program Engineer will attend professional training courses offered by specialists at least once per year. This includes at least one course in environmental issues and regulations. Eight hours of annual refresher training is required to keep the Hazardous Waste Operators Training certification current. Additionally the Waste Program Engineer is responsible for completing DOT training to meet the requirements of 49 CFR 172.700. A course in transportation as required by the DOT will be attended triennially.

5.3 Field Chemist

The Field Chemist is typically a contractor from the corporation handling the packaging, storage, and disposal of lab pack, non-bulk and bulk quantities of wastes. The Field Chemist will work with the Hazardous Waste Technicians to ensure that the hazardous waste stored in the Waste

Management Facility is in compliance with the Part B Permit and current State and Federal regulations.

Qualifications:
The Field Chemist should meet the following minimum requirements:

- Degree in natural sciences or engineering
- Working knowledge of regulations and hazards associated with hazardous materials/wastes.
- DOE Level "Q" Clearance (or in process)

Training:
The Field Chemist must be qualified to work at the SNL/CA Waste Management Facility. Eight hours of annual refresher training is required to keep the Hazardous Waste Operators Training certification current. Additionally the Field Chemist is responsible for completing DOT training to meet the requirements of 49 CFR 172.700. A course in transportation as required by the DOT will be attended triennially.

5.4 Hazardous Waste Technician

The Hazardous Waste Technician provides assistance to waste generators; collects, transports, and packages waste; and supports the general WMF operations. The Field Chemist and the Hazardous Waste Technician work closely together in a variety of WM activities. The technician may not necessarily be trained in all aspects of the listed responsibilities, as training is function-specific. As new responsibilities are added to a technician's duties, the technician will be trained accordingly.

Qualifications:
The Hazardous Waste Technician should meet the following minimum requirements:

- High School Equivalency

Training:
The Hazardous Waste Technician must be qualified to work at the Waste Management Facility. Additionally, the technician is required to complete an annual review of classroom and on-the-job training that teaches them to perform their duties in a way that ensures the facility's compliance with the EPA, OSHA, DTSC and DOE. Eight hours of annual refresher training is required to keep the Hazardous Waste Operators Training certification current. Additionally the Hazardous Waste Technician is responsible for completing DOT training to meet the requirements of 49 CFR 172.700. A course in transportation as required by the DOT will be attended triennially.

5.5 Radioactive Waste Representative

The Radioactive Waste Representative conducts waste operations to assure compliance with state and federal regulations governing the handling, treatment, storage, and disposal of

radioactive and mixed wastes. The Radioactive Waste Representative also performs support activities for the hazardous waste operations in compliance with OSHA, EPA, DOT, DTSC and DOE. The Radioactive Waste Representative will have knowledge of basic health physics as it applies to collecting samples and safe handling techniques for radioactive and mixed wastes.

Qualifications:
The Radioactive Waste Representative should meet the following minimum requirements:

- High School Equivalency
- Meet the training requirements of a Hazardous Waste Technician
- Complete RAD Worker II training

Training:

Before Radioactive Waste Representatives are permitted to handle radioactive and mixed wastes, that individual must meet the requirements of a Hazardous Waste Technician in addition to receiving 8 hours of Radiation Safety Training. Once determined that the employee/contractor meets the training requirements of the operating procedures, that person will be permitted to work without direct supervision.

5.6 Emergency Response Backup

The Emergency Response Backup serves as a backup to WM personnel as needed.

Qualifications:
The Emergency Response Backup should meet the following minimum requirements:

- High School Equivalency
- 24 hour HAZWOPER training at a minimum

Training:

Before the Emergency Response Backup is permitted to support a site spill response the employee/contractor must meet the training requirements of the operating procedures.

5.7 Corporate and ES&H Training

SNL views training, development and education as a strategic investment in SNL's future. The policy of SNL is to maintain a high level of technical and administrative competence in support of its mission. In support of this policy, SNL maintains a set of general corporate training requirements that cover a wide range of areas such as security (physical, information, and computer), business ethics and diversity, general ES&H and general business processes. Standard corporate requirements are identified for each individual in the online Corporate Education, Development and Training (CEDT) database. The online database tracks completion

status for all corporate training requirements and provides electronic reminders to WM Program personnel when a course is due. SNL training coordinators identify corporate training requirements for new hires. SNL has developed online training courses to meet these requirements.

In addition to corporate training requirements, each program assignment has job-specific training requirements. These training requirements address safety as well as specific job functions. The Environmental Management Department Manager, Program Lead, or Department ES&H Coordinator may identify job-specific training requirements. Most of these requirements are tracked in the online database. Table 5-1 presents job-specific training requirements for WM Program personnel. Some of the courses are internal to SNL, while others are provided by outside contractors or agencies.

Specific training requirements described for each WM Program position are described above and outlined in the Part B Operations Plan. The training requirements meet applicable regulatory requirements, including:

- U. S. Environmental Protection Agency (EPA), Title 40 CFR
- Occupational Safety and Health Act (OSHA), Title 29 CFR
- Department of Transportation (DOT), Title 49 CFR
- California Department of Toxic Substances Control (DTSC), Title 22 CCR
- DOE and SNL/CA requirements
- Corporate ES&H training

DTSC, OSHA, DOT, EPA or SNL will define the frequency and duration of refresher training. WM personnel will take the refresher courses and document training as necessary. WM maintains personnel training records in order to ensure all personnel remain current on their training.

Acceptable means of training include the both external and internal resources (e.g., Safe Operating Procedures, courses provided by Health & Safety Department). Examples include:

- external classroom courses or seminars,
- on the job training,
- web-based training,
- videos,
- other methods approved by SNL or the EM department manager.

Table 5-1 Waste Management and Emergency Response Backup Training Requirements

Training Courses Requirements	Training Frequency	Waste Program Lead	Waste Program Engineer	Field Chemist	Radioactive Waste Representative	Hazardous Waste Technician	Emergency Response Backup
Emergency Preparedness (ESH100)	Annual	R	R	R	R	R	R
ES&H Rights (ESH100)	Annual	R	R	R	R	R	R
Lockout/Tag Out Awareness (ESH100)	Annual	R	R	R	R	R	R
Fire Extinguisher: Awareness (ESH100)	Annual	R	R	R	R	R	R
Fire Extinguisher: Hands On Use (FRP106)	Annual	R	R	R	R	R	N
HAZWOPER: 40 Hours Initial (ENV100) + Three Days Supervised Training (ENV102X)	One Time	R	R	R	R	R	O
HAZWOPER: 24 Hours Initial (ENV102) + One Day Supervised Training (ENV100X)*	One Time	N	N	N	N	N	R
HAZWOPER: 8 Hours Refresher (ENV103)	Annual	R	R	R	R	R	R
DOT: Basic Hazardous Materials Transportation (PKX100)	Triennial	R	R	R	R	R	N
DOT: Radioactive Materials Transportation (PKX111)	Triennial	R	R	O	R	O	N
DOT: Basic Hazardous Waste Transportation (PKX112)	Triennial	R	R	R	R	R	N
Respiratory Protection For Users (RSP215)	Annual	R	R	R	R	R	N
Confined Spaces Awareness (CNF105)	Triennial	O	O	R	R	R	N
Confined Spaces Entry (CNF107)	Triennial	O	O	O	O	O	N
Standard First Aid (MED108)/ Adult CPR (MED104)	Triennial/ Annual	O	O	O	O	O	O
Blood Borne Pathogens (MED113)	Annual	O	O	R	R	R	O
Forklift: Hands On Use (FKL153)	Triennial	O	O	R	R	R	N
Forklift Operator Refresher (FKL153R)	Triennial	O	O	R	R	R	N
Radiation Safety Orientation (RAD102)	Biennial	R	R	O	R	O	R
Radworker Training (RAD 210, RAD 230)	Biennial	R	R	O	R	O	N
Annual Site Specific Discharge Prevention Briefing/Oil Spill Plan Awareness (ENV190/191)	Annual	R	R	R	O	R	N

Notes: R = Required, O = Optional, N = Not Required

*Not required if personnel have taken ENV102/ENV102X

6 Performance Measures

EMS objectives that are applicable to WM include full compliance with regulatory requirements for the management of waste generated. To assess performance in meeting these objectives, WM tracks the amount of waste generated, compliance reports and regulatory agency correspondence.

The WM Program has performance measures that are continuously used to assess the performance and effectiveness of the program. The measures are:

Meet all regulatory monitoring requirements (Hazardous Waste (HW), Low-Level Radioactive Waste (LLRW), and Mixed Waste (MW)
Meet regulatory report due dates (usually annual)
Direct involvement with the Line and the EP Rep. about WM issues
Meet quality assurance goals
Compliance with CalEPA/DTSC permit requirements
Compliance with DOE 435.1 requirements

Currently the Program is meeting all regulatory report due dates. The WM Program staff continues to have direct communication with the line and EP Rep through IDT meetings, direct phone calls and presentations to department staff.

FY2008 EMS environmental targets and objectives were approved in November of 2007. The performance measures will indicate the degree of success in meeting those targets. One of the EMS environmental objectives was to reduce the site's generation of routine hazardous waste. This objective requires actions by other departments. Activities performed directly by the WM personnel in 2007 that support this multi-year objective include a range of efforts from Line generator education to supporting chemical inventory cleanout campaigns led by the Hazardous Materials Management Program.

The EMS uses metrics to show progress in achieving goals. These metrics are updated on the Environmental Management web page. Figure 6-1 represents the site's generation of routine hazardous waste per year. In the future, WM will continue to assist the Pollution Prevention Program team, as needed, to reach EMS targets for the reduction of routine hazardous waste generation on site.

Figure 6-2 represents the site's chemical spills. While not tied to a specific EMS target, there has been a reduction in the number of site chemical spills as well as the total number of gallons spilled over the years. This suggests improved Line processes and procedures coupled with additional training have reduced this pathway for hazardous waste generation.

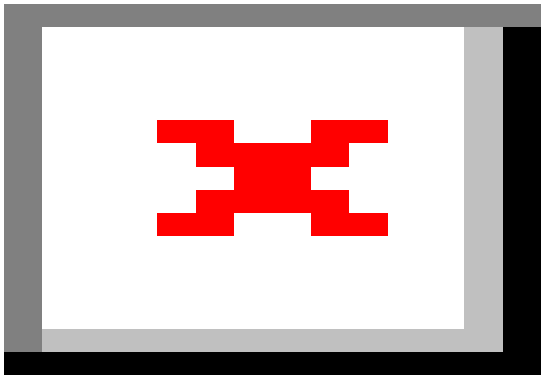

Figure 6-1 SNL/CA Routine Hazardous Waste Metrics

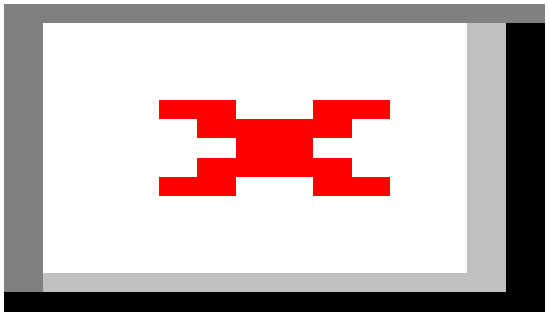

Figure 6-2 SNL/CA Chemical Spills

7 Quality Assurance

The WM Program applies the following program-specific elements to assure quality is maintained in data collection, analyses, and reporting:

- Online and hardcopy forms ensure that a standard process is followed for collection and management of waste data.
- All data input is reviewed for accuracy after the input is complete.
- Internal reports and documents are subjected to internal review and technical editing before finalizing.
- DOE/SSO and applicable SNL/CA staff review published reports before finalizing.
- Samples are collected for waste stream verification according to the Waste Analysis Plan in the Part B Permit.
- Sample results are compared to established criteria for the acceptability of data in the *Operating Procedure for Data Validation and Verification for the Environmental Monitoring Program*. This procedure contains methods for determining the accuracy, precision, completeness, comparability and applicability of the data.

7.1 Program Risk Assessment

The January 2008, WM Program updated a risk assessment (Appendix B) as part of the decision making process to determine the appropriate level of formality required for Program activities and identified six potential risks related to program activities. Table 7-1 lists each risk and the calculated risk category. It was determined that the risk associated with the WM Program was the risk of an accident or hazardous waste spill during pick-up, transport or at the waste facility or an incident at the waste facility. The overall risk for WM Program issues was determined to be medium. Measures taken by the WM Program to mitigate this risk are 1) routine WM personnel training, 2) maintaining operational controls including secondary containment, 3) building, vehicle and container inspections and 4) improve processes and Line training.

Table 7-1 Waste Management Program Risks 2008

Risk #	Risk	Risk Category
1	Spill or accident during waste pick up	Medium
2	Spill or accident during waste shipment	Medium
3	Spill or accident at SNL/CA waste facility	Medium
4	Incident at waste disposal facility	Medium
5	Site-wide Earthquake Induced Spill or Accident	Low
6	Reduction of program funding by 10 - 30%	High

For the medium risk category for Risk 1, the small quantities transported ensure that any spill would be small, requiring a minor cleanup effort. Given the nature of the waste currently transported by the Waste Management Program, the likelihood of injury to personnel from a spill is remote.

For the medium risk category for Risk 2, regulations governing the packing of waste drums and other waste transportation regulations are intended to mitigate the severity of such accidents. A worst-case scenario would involve the breaching of several drums of SNL/CA waste during a highway accident. Such an accident would require minor environmental cleanup, and would not likely involve injury to the public or personnel.

For the medium risk category for Risk 3, release scenarios could range from a small chemical bottle (e.g. 100 mL) to several 55-gallon drums (in the event of an earthquake). The waste facility incorporated secondary containment in its design, so no release outside of the facility is envisioned but minor cleanup would be necessary

For the medium risk category for Risk 4, SNL/CA would be responsible for the portion of the clean up apportioned to SNL/CA waste. A larger portion could be assigned if was determined that SNL/CA was the *cause* of the incident. It is assumed that the dollar amount of the SNL/CA liability would be less than 1% of the SNL/CA annual operating budget ($220 million in FY 2006).

For the medium risk category for Risk 5, SNL/CA would be responsible for the on-site clean up and cost of waste disposal. It is assumed that the dollar amount of the SNL/CA liability would be less than 1% of the SNL/CA annual operating budget ($230 million in FY 2007).

For the high risk category for Risk 6, Waste Management implemented a review of program activities that could be streamlined. A 10-30% reduction in program funding would result in decreased staffing, training, and purchases. Only those program activities that are required by regulation, Sandia policy, technical work documents, or DOE/NNSA would be conducted. Discretionary training and travel for program staff would be eliminated. Purchases for replacement equipment and equipment repair would be reduced. A reduction in Line training and support would occur.

7.2 Quality Significant Purchases Determination

A Quality Significant Purchases Determination, Appendix C, has been completed in accordance with the Environmental Management Quality Assurance Program Plan. The Hazardous Waste activities of the WM Program do not have any quality significant items. This determination is consistent with the SNL/NM Hazardous Waste Operations determination of "Quality Significant Items".

However, drums and boxes used for Low-Level Radioactive Waste and Mixed Waste are quality significant items and are procured and handled according to SNL quality significant requirements.

8 Program Assessments

WM performed the assessments described below. All assessments were documented and retained in accordance with *OP471347 Administrative Procedures for Managing Sandia/CA ES&H Recorded Information*.

8.1 Follow-up on 2006 Program Self Assessments

The 2006 Program Self Assessment identified issues with Line under-compliance with requirements and WM Program documents out-of-date. The 2007 Program Self Assessment showed considerable improvement in up-to-date documentation. Line under-compliance continues to be identified in EP Rep. assessments and site Management Self Assessments.

8.2 2007 Program Self Assessment

The Program Self Assessment is an annual effort to determine the completeness, quality and efficiency of the program structure and management. It is also used to determine the alignment of the program with ISO14001 EMS requirements and principles.

The objective of this assessment is to assure that the program provides all of the required elements and continually strives for areas of improvement. This assessment includes a review of all procedures, processes, technical work documents, web pages, publications, communications, etc., of the program to assure that they are streamlined, accurate and current. The *Programmatic Document Review Form* is used to document this part of the self-assessment, as referenced in the *Quality Assurance of Data, Documents and Select Activities of the Environmental, Safety and Healt*h *Departments, 8516 and 8517.*

In 2007 the WM Program focused on select Waste Management business processes at SNL/CA. The assessment included the standard review of the currency of the web pages and Technical Work Documents and select business processes of SNL/CA Waste Management Program. The results were reported in the December 20, 2007, *Self-Assessment Report: EMS Waste Management Program SA Assessment Number 2328* (see Appendix D*)*.

8.3 Line Performance Assessment

The Line Performance Assessment is an annual effort, part of the Program Self Assessment, to determine how well the line or site is implementing the provisions or requirements of the program or supporting specific program-related objectives/targets. The success or failure of the line or site to implement program requirements or provisions can be attributed to many things: culture, line management support, communications, program management, etc. (Note, poor program implementation by the line may not necessarily indicate poor program management or execution, but the Program Lead will consider whether these are contributing factors and take appropriate action.)

Significant line violations to program requirements that are discovered during this assessment are entered into the ES&H Self Assessment database for communications and tracking. (Note, the assessment is for the "big picture" and not just conducted to find violations.) The completed

finding form is submitted to the Division 8000 ES&H coordinator for entry into the self-assessment tracking system. These are then tracked to closure in the Division 8000 self-assessment process.

In conducting these assessments the Program Lead makes every effort to align with the scheduled Line Management Self Assessments conducted by the ES&H Coordinators. This minimizes the disruption to the Line and gains the manager's attention.

8.4 Environmental Programs Representative Program Assessment

The Environmental Programs Representative (EP Rep.) performs and records informal assessments of line implementation of critical program elements. The following reports were completed in this annual report period. Only the WM Program related issues are included below. All issues that the EP Rep refers to the WM Program Lead are resolved by working with the owner of the issue or are given a finding and resolved as a routine part of the Line Self-Assessment Process. A common issue identified by the EP Rep. assessments is the on-going challenge to the Line waste generator to setup and properly manage their Satellite Accumulation Areas (SAA). This issue will be a focus for the WM program in 2008.

Environmental Programs Representative Center 8100 Assessment of Environmental Programs December 2006/January, 2007

No Waste Management related Areas for Improvement were identified.

Environmental Programs Representative Center 8300 Assessment of Environmental Programs April/May 2007

Noteworthy Practices

Compared to previous year's 8300 assessment there were few of areas of concern. The wide-spread mismanagement of Lead solder use identified during last year's assessment had been corrected. The areas assessed this year had their own hazardous waste accumulation areas and no indication of significant mismanagement of waste that was evident as in past years. Additionally, access to laboratory and office areas was easily obtained.

Assessment Comments

- 906/151: Poor housekeeping. This lab is listed as inactive and is used for storage. Past experience shows these areas become susceptible to illegal accumulation of hazardous waste and/or contaminated equipment. A thorough inspection of the room was not possible due to impassibility, however, an empty aerosol can and some batteries were removed – all of which were disposed of as hazardous waste.
- 906/165: An old waste can that was being used as bag storage was permanently marked "Dye Waste", the occupant was advised to remove or obliterate the marking.
- 906/165 Breezeway: Cabinet in breezeway contained several items of issue that the occupants immediately addressed. Issues: Spill in secondary containment, two containers of

liquid were not labeled, Combustibles were stored on top of cabinet, paper/packaging stored in cabinet with chemicals, and empty bottles were not segregated from hazardous waste and material. EP Rep provided occupants with empty stickers and guidance was provided to manage empties on separate shelf from waste. Also, occupants were advised to label and segregate material "pending analysis".

- 968/102: Rag was disposed of in sharps container, on the spot correction by CRDL facility manager.
- 968/115D: Additional empty stickers mailed to CRDL Facility Manager at his request.
- 968/117: Informed occupants not to label waste cans until they contain waste.
- 968/S.Dock: Box accumulation in breezeway - on the spot correction by CRDL Facility Manager. Chemical cabinet had container with handwritten label "acid found 2/22/06" also a bottle with clear liquid not labeled. Chemical cabinet contained several items, including one carboy with 2 inches of liquid, and a bag of unknown samples not labeled. CRDL Facility Manager advised technician to submit WDDR and contact Waste Management for assistance with characterization.

Environmental Programs Representative Center 8500 Assessment of Environmental Compliance June/July, 2007

Noteworthy Practices

8513 and 8514 should receive special recognition for their implementation of new practices for managing key areas identified as hazardous waste accumulation areas. These groups acted aggressively with the Environmental Management group and specifically with the EP Rep to develop and implement new controls for managing their hazardous waste accumulation areas. Areas that in the past were issued findings for improper management have significantly improved. Those areas that have shown the most improvement are:

963 Carpenter/Machine/Metal Shops
Rag cans are segregated properly by waste stream and accumulation sheets are being completed, Jeff Raymond who has been responsible for overseeing this area, as well as the staff who utilize the rag cans should be commended.

9633 Tool Crib
The waste accumulation area was significantly cleaner then last year. All waste is segregated, bagged and labeled. Also, the area is locked and under the control of the designated personnel responsible for this area.

9623 Hazardous Waste Storage Area
The waste accumulation area is locked and under the direct control Fred Richards who is responsible for this area. Fred ensures those adding to his waste streams complete the accumulation sheets at the time he provide the key. Fred indicated the area was undergoing a renovation to ensure segregation from material and hazardous waste is more visible.

Assessment Comments

The EP Rep did make some on-the-spot corrections and provided guidance to staff regarding future control over work areas. Additional results of the assessment are as follows:

- 968 Equipment room: An air compressor was leaking in a spill containment pan. Although this is the intended use of the pan, EP Rep provided Bobby Smith with spill pads to be placed under the equipment during maintenance.
- 9633 Hazardous Waste Accumulation Area: EP Rep identified an issue that did not come up during training. The tool crib personnel responsible for creating the WDDR did not have a holding area to place the items until they are deemed "waste". The cabinet was labeled to accommodate a shelf assigned for "Waste Pending Analysis" to provide a storage area. Also, personnel immediately implemented tighter controls of the key to the cabinet.
- Bldg. 9631 Landscapers Shed: This shed is locked and the waste was clearly segregated. The EP Rep met with Gary Weese and created WDDR's for all waste streams in the shed. Gary has been advised to contact the EP Rep for future assistance with generating these waste tags. Also, "Empty for Recycling" stickers were provided for recycling containers. Gary Weese indicated that he will maintain sole control over this waste, with the other landscapers giving him their products to manage for disposal.
- Bldg. 9623 Hazardous Waste Storage Area: Fred Richards indicated that he will be moving his storage areas around to ensure Hazardous Waste is segregated from material in use. He maintains locked control over hazardous waste and also implements Accumulation sheets which he ensures are completed when he hands out the key to the area.
- 912/242: EP Rep submitted WDDR for disposal of office hazardous waste. Occupant indicated that she had no further use for the chemicals and will not be ordering aerosols in the future.
- 911/210X: EP Rep submitted WDDR for disposal of office hazardous waste. OMA in area indicated aerosol was left inadvertently by the copy repair person.
- 911/102: EP Rep submitted WDDR for disposal of several items of office hazardous waste. Occupants indicated they had no further use for these specific chemicals. Some personal use chemicals will be stored in their office areas and will be taken home when finished using.
- 922/131: Occupant indicated she had brought spray disinfectant from home to be used for business purposes. EP Rep advised her to contact Susie Orth for inclusion in the chemical inventory and also advised her that this will be Office Hazardous waste when done and should be managed accordingly.

Environmental Programs Representative Center 8700 Assessment of Environmental Compliance August/September, 2007

OMA's were provided guidance on managing Office Hazardous Waste. The OMAs were provided with battery envelopes, empty for recycle stickers, and fact sheets on EMS and Office Hazardous Waste. Several items were discovered that were no longer in use and therefore were submitted for disposal as hazardous waste, as a courtesy, by the EP Representative.

Three laboratories in bldg. 916 and 941 were provided with trays, stickers, and fact sheets on managing empty chemical containers. The occupants readily addressed improper management of waste containers as indicated by the EP Representative.

Bldg. 916/151 – Occupant was asked what types of chemicals were in use and how they were disposing of them. This communication led to the identification of several processes on-site that are using very small amounts of solvents in wiping processes. The EP Representative asked Waste Management to re-evaluate the regulation regarding flammable solids to provide a definition of the amounts required for a positive result of flammable hazardous waste.

Bldg. 941/1136 – Good management of recycling – however, more segregation is needed. Image 1 shows recycled containers on the far right; other chemicals in bags and tray right next to the empty recycling are full and are not labeled. If these are waste they must be labeled as such. If they are chemicals in use then they need to be segregated from the waste area. If the chemicals are in the process of being determined if they are waste they should be stored in an area labeled "Waste Pending Analysis".

Bldg. 941/1137N – General Housekeeping issues – rags and dirty wipes on the floor, Improper storage of chemicals, waste and trash in fume hood; improper identification and disposal of waste. The ES&H coordinator was advised of the issues identified in this laboratory and he contacted the owners for immediate cleanup.

Black powder was apparent throughout the laboratory – in the trash, loose in the hood, and on the floor. The ES&H Coordinator identified it, through the CIS as Silicone Dioxide. Waste Management has indicated this isn't a hazardous waste, but good housekeeping practices mandate cleanup.

The following photos are taken inside the hood. The hood contained three or four open bottles labeled "Hyprez Diamond Slurry". These bottles must be kept closed when not in use. If they are completely empty, they may be recycled as "empty containers". If not, they must be disposed of as hazardous waste if they are no longer needed. Image 6 shows a container labeled "used" alongside several other containers which upon closer inspection may exhibit characteristics of being "waste". They need to be managed as Waste or labeled to indicate they are in use.

Environmental Programs Representative Department 8755 Assessment of Clean Up Activities in Bldg. 942/1308, 1309 and 916/118 Compliance April 2007

Waste Management supported the special clean-out of David Robinson labs The task included cleanup of chemicals and un-needed equipment in laboratory spaces that he planned to occupy. The unneeded chemicals and equipment were left intact by their previous owners due to a lack of funding for their program to complete cleanup activities.

Noteworthy Practices

David Robinson presented this project to the IDT in a timely fashion. He is working diligently with ES&H to address all issues. Additionally, prior to marking items for disposal, David has advertised all unneeded items and chemicals for re-use.

Pollution Prevention and Waste Management has been working diligently to assist David with the cleanout of these areas. Both teams immediately recognized the need to act quickly to assist in the cleanout of these laboratories while funding is available.

Environmental Programs Representative Center 8900 Assessment of Environmental Compliance February/March 2007

One noted area of concern is located in 912/220 suite. The EP Representative removed a tray of several leaking batteries that had been accumulating for a long period of time. These batteries were labeled and submitted as hazardous waste by the EP Representative. The occupants in the area were unaware of the proper handling procedures for Office hazardous waste and were unable to designate a responsible person. However, it is noted that the 8948 department manager was very receptive to calling an immediate department meeting and inviting the EP Representative to discuss managing Office hazardous waste.

8.5 Division Line Self-Assessment

The Division Line self-assessment team led by the 8000 Division ES&H Coordinator at SNL/CA issued 7 WM findings for missing waste tags and other waste packaging issues in the Line. These findings were all resolved as a routine part of the Line self-assessment process.

9 Accomplishments

In the past year, WM accomplished the following activities:

- Assisted the Hazardous Materials Management Program in achieving and exceeding the EMS site goal for reduction of >10 year old NFPA Health Hazard Rated 3 & 4 hazardous materials in 8700 by 20%. A 29% reduction was actually achieved in the campaign. WM handled the additional hazardous waste generated from the reduction in their normal pickup schedule.

- SNL/CA packaged and shipped all of the mixed waste stored in WMF-961. The waste was shipped to Perma-fix in July 2007.

- WM continues to offer process evaluations for waste generators as part of the IDT process, waste generator training and as a separate site visit when requested.

10 Trends

10.1 Budget Trends

The FY 2008 budget was zeroed from FY 2007 due to the loss of the NW RTBF funding. This required Waste Management both at SNL/NM and SNL/CA to implement a full cost recovery chargeback.

10.2 Waste Generation Trends

Over the past few years SNL/CA has seen a significant reduction in the volume of radioactive waste generated onsite. However, there are still several areas onsite, such as the Building 979 machine shop and Building 927 vault that contain radioactive sources or contaminated materials. These materials will eventually have to be disposed of as radioactive or mixed waste and will result in a large volume of waste being generated and disposed of at that time. Once these areas are cleaned, the generation of radioactive waste should be minimal.

Over the past several years SNL/CA has seen a decrease in the generation of hazardous waste (see Table 10-1). SNL/CA anticipates the generation of hazardous waste will continue to decrease with the pollution prevention program activities increasing. The CY 2006 data is higher than the CY 2005 data largely due to the site-wide cleanout of hazardous materials.

Table 10-1 Amount of Hazardous Waste Generated at SNL/CA

CY 2000	CY 2001	CY 2002	CY 2003	CY 2004	CY 2005	CY 2006	CY2007
126,909 kg	60,619 kg	73,229 kg	56,505 kg	85,382 kg	31,200 kg	56,530 kg	38,326 kg

10.3 Waste Regulatory Trends

There are more products falling under the new Universal Waste regulations. This could potentially lead to more waste streams for the P2 Program to manage. Universal waste rules allow common, low-hazard wastes to be managed under less stringent requirements than other hazardous wastes (e.g. batteries, mercury containing devices, electronic devices, cathode ray tubes (CRTs) and fluorescent lamps). However, SNL/CA manages some of these Universal Wastes as Hazardous Waste.

10.4 Waste Information Management System Application Development Trends

The Waste Information Management System (WIMS) and radioactive waste tracking system (RADTRACK) are currently under redevelopment to modernize and standardize the database/application tools technology, add required feature changes and to merge the two system into a unified waste tracking system for SNL. This multi-year project has been funded and has begun to progress meeting the variety of goals and objectives. An ES&H champion, Waste Management stakeholders/customers group and a reinvigorated WIMS application team came together under the leadership of Anita Reiser and Michael Corem from SNL/NM. CY 2006 was a key year to as this team and project got on track to meet the future needs of WM and the waste generators who use the tool. The application development progress was slow in 2007 and further reduced due to budget uncertainties in 2008. This is a disturbing development since WIMS needs to be modernized to work efficiently and appropriately in the corporate computing environment at SNL.

11 Goals and Objectives

A general EMS environmental goal for SNL/CA is to reduce the quantity of waste generated at SNL/CA. WM will continue to support the Pollution Prevention Program and other programs to achieve this goal. SNL/CA EMS WM objectives, targets, and actions that support this goal are discussed below.

11.1 General Environmental Management EMS Objectives and Targets

General Environmental Operations……..
Objective: Provide exceptional environmental management for the SNL/CA site.

Targets:

- Receive zero findings per audit per environmental program as the result of annual DOE audits.
- Receive no more than 2 minor non conformances as a result of ISO14001 certification audits.
- Receive no Notices of Violation (NOVs) as a result of any external regulatory agency audit.
- Maintain a level of published environmentally-related communications at 6 per month (total of 72/FY).
- Maintain a level of environmentally-related outreach activities at 4 per month (total of 48/FY).
- By the end of FY2010 achieve a 20% increase in the EMS awareness survey average score from an FY2008 baseline.

11.2 Waste Management Specific EMS Objectives and Targets

Hazardous Waste……
Objective: Minimize the generation of hazardous waste.

Radiological & Mixed Waste
Objective: Minimize the generation of radiological and mixed waste.

11.3 Internal Waste Management Objectives and Targets for 2008

Other internal goals set for WM include

1) Continue to assist the site in achieving a reduction of hazardous materials onsite. WM will continue to incorporate laboratory cleanouts into their routine schedule and offer process evaluations for waste generators as part of the IDT process, waste generator training and as a separate site visit when requested.
2) Complete transition of SNL/CA Radioactive Waste Management Program to SNL/NM. The transition is stipulated in the Memorandum of Agreement approved by both SNL/CA and SNL/NM management in August 2005. SNL/CA operations and training will be modified to include SNL/NM operations and training. The changes will be documented in SNL/NM procedures as well as in new procedures for SNL/CA. The Mixed Waste Program will be retained by SNL/CA due to the more stringent California hazardous waste regulations. SNL/NM will provide assistance for the radioactive component of mixed waste.
3) Revise Waste Generator Guidelines in the ES&H Manual. Create Chapter 20 to address contractor construction and demolition debris policy. Revise Chapter 19B & 19C to reflect current conditions for SNL/CA relating to radioactive waste management.

Appendix A: Personnel Assignments

Name	Position	Date associated with the Waste Management Program	Radioactive & Mixed Waste Management Field Activities	Hazardous Waste Management Field Activities
G. Shamber	Manager, Environmental Management Department Emergency Response Backup	Oct 2004	No	No**
M. Brynildson	Waste Program Lead Waste Program Engineer	July 2005	Yes	Yes
J. Harris	Waste Program Lead Backup Emergency Response Backup	May 2002	No	No**
L. Ford*	Waste Program Engineer	Jun 1997	Yes	Yes
R. Oteri	Waste Management Technician	Jul 2001	Yes	Yes
M. Clark*	Field Chemist	Apr 2002	No	Yes
P. Irish*	Waste Management Technician	Jan 2005	Yes	Yes
S. Orth*	Waste Management Technician	Jan 2000	Yes	Yes
R. Holland	Emergency Response Backup	Jan 1997	No	No**
D. Dicker	Emergency Response Backup	Mar 1996	No	No**
L. Farren	Emergency Response Backup	Jul 1994	No	No**
J. Chavarria	Emergency Response Backup	Jan 1997	No	No**
D. Ross	Emergency Response Backup	Jan 1997	No	No**
A. Sandoval	Emergency Response Backup	Jan 1997	No	No**

**** Contractor Position***
***** Backup Field Position Only***

Appendix B: Waste Management Program Risk Assessment

Waste Management Program Risk Assessment (Jan 2008)

The risk assessment process for the Waste Management Program follows the general steps of

1. Identify the risk
2. Identify the probability of the event occurring
3. Identify the consequence if the event occurs.

The following tables will be used to assign a numeric value to the probabilities and consequence categories.

Likelihood/Probability Of Occurrence Level	Likelihood/Probability Criteria
Very High	• Everything points to this occurring
High	*• High chance • Lack of relevant processes or experience contribute to a high chance of occurrence*
Medium	*• Even chance*
Low	*• Not much of a chance*
Negligible	• Negligible chance this will occur

CONSEQUENCE/ SEVERITY LEVEL	CONSEQUENCE/SEVERITY CRITERIA
High	*damage (e.g., ozone depletion, rad soil contamination) • Serious environmental impact resulting in recovery actions lasting 5 years or more (e.g., TCE in aquifer) • Results in General Emergency (affects both onsite and offsite) • Unsatisfactory rating by external regulators or cease and desist order • Affects lab leadership, including prime contract • Actions, inactions or events that pose the most serious threats to national security interests and/or critical DOE assets, create serious security situations, or could result in deaths in the workforce or general public (i.e., IMI-1) ₁ • Actions, inactions or events that pose threats to national security interests and/or critical DOE assets or that potentially create dangerous situations (i.e., IMI-2) † • Unallowable costs or fines >$1M • Adverse public opinion – high interest/widespread open public attention or debate (lasting weeks to months) • Customer dissatisfaction results in permanent loss of lab customer • Catastrophic failure to meet internal requirements* • Loss of major program within the division (>$10M)

Medium	*• Has the potential for adverse impact on Sandia's programmatic performance or the achievement of corporate strategic or operational objectives • Significant injury/illness -fully recoverable with a long recovery time • Significant environmental impact resulting in recovery actions lasting up to 5 years (e.g., major oil spill) • Results in Site/Area Emergency (affects multiple onsite facilities) • One of regulator "hot buttons" (e.g., NNSA, NMED) • Results in increased oversight of limited number of functions • Actions, inactions, or events that pose threats to DOE security interests or that potentially degrade the overall effectiveness of DOE's safeguards and security protection program (i.e., IMI-3) † • Unallowable costs or fines >$500K and <$1M • Adverse public opinion – moderate interest, limited PR problems of short duration (days) • Customer dissatisfaction results in partial loss of program • Significant failure to meet internal requirements* • Loss of program within division (>$1M)
Low	*• Minimal injury/illness – Fully recoverable with a short recovery time • Minimal environmental impact that can be improved within days • Results in increased short-term oversight • Results in an Operational Emergency (affects a single onsite facility) • Actions, inactions, or events that could pose threats to DOE by adversely impacting the ability of organizations to protect DOE safeguards and security interests (i.e., IMI-4) † • Unallowable costs or fines <$500K • Adverse public opinion with short-term local negative publicity or embarrassment*
Negligible	• Little or no attention, might be discussed as lesson learned

The risk level will be graded according to the following matrix. Adapted from DOE O 471.4.

RISK GRADING LEVELS					
		Consequence/Severity			
		Negligible	***Low***	***Medium***	***High***
Likelihood of Occurrence	***Very High***	*Low*	*Medium*	*High*	*High*
	High	*Low*	*Medium*	*High*	*High*
	Medium	*Low*	*Medium*	*Medium*	*High*
	Low	*Low*	*Low*	*Low*	*Medium*
	Negligible	*Low*	*Low*	*Low*	*Low*

Risks Associated with the Waste Management Program

1. **Spill or accident during waste pick up**
2. **Spill or accident during waste shipment**
3. **Spill or accident at SNL/CA waste facility**
4. **Incident at waste disposal facility**
5. **Site-wide Earthquake Induced Spill or Accident**
6. **Reduction of program funding by 10%**

1. Spill or Accident During Waste Pick-up.

a. Identification of Risk

During the transport of waste from the generator's location to the on-site waste transport truck, there is the possibility of an accidental spill. There is also the possibility of the waste transport truck having an accident on-site, causing a spill. There is also a potential for an accidental spill during the unloading of the on-site waste transport truck.

b. Probability of Occurrence

Given the number of waste pick-ups and the frequency of waste transport on-site, it is considered High that there will be an accidental spill during the lifetime of the SNL/CA facility.

c. Consequence of Occurrence

The small quantities transported ensure that any spill would be small, requiring a minor cleanup effort. Given the nature of the waste currently transported by the Waste Management Program, the likelihood of injury to personnel from a spill is remote. The overall consequence assigned is Low.

d. Overall Risk Category

In accordance with the chart above, for a risk with a probability High with a Low severity, the risk category is Medium.

2. Spill or Accident During Waste Shipment

a. Identification of Risk

Small spills could occur during loading and unloading of a waste truck. These spills would typically be on the order of a single 55-gallon drum. Larger spills involving the entire contents of the truck could occur from highway accidents.

b. Probability of Occurrence

Given that several waste shipments are performed each year, and the number of highway miles traveled by each shipment, it is considered High that an accident will occur sometime during the lifetime of the SNL/CA facility.

c. Consequence of Occurrence

Regulations governing the packing of waste drums and other waste transportation regulations are intended to mitigate the severity of such accidents. A worst-case scenario would involve the breaching of several drums of SNL/CA waste during a highway accident. Such an accident would require minor environmental cleanup, and would not likely involve injury to the public or personnel. The consequence category assigned is Low.

d. Overall Risk Category

In accordance with the chart above, for a risk with a probability of High, with a Low severity, the risk category is Medium.

3. Accident at SNL/CA Waste Facility

a. Identification of Risk

There is the possibility of an accident involving the release of hazardous materials.

b. Probability of Occurrence

Given the number of waste containers handled at the facility, it is considered High that there will be an accident involving the release of hazardous materials sometime during the lifetime of the SNL/CA site.

c. Consequence of Occurrence

Release scenarios could range from a small chemical bottle (e.g. 100 mL) to several 55-gallon drums (in the event of an earthquake). The waste facility incorporated secondary containment in its design, so no release outside of the facility is envisioned. Minor cleanup would be necessary, so the consequence category assigned is Low.

d. Overall Risk Category

In accordance with the chart above, for a risk with a probability of High, with a Low severity, the risk category is Medium.

4. Incident at Waste Disposal Facility

a. Identification of Risk

Incidents, such as fires are not unknown at waste disposal facilities. During 2005, there was a fire at the primary waste incineration facility SNL/CA sends waste to in Arkansas. No SNL/CA waste was involved in the fire, but the potential exists.

b. Probability of Occurrence

Given the recent history, the probability of occurrence is considered High that an incident will occur at a waste disposal facility handling SNL/CA waste at some time during the lifetime of the SNL/CA facility.

c. Consequence of Occurrence

SNL/CA would be responsible for the portion of the clean-up apportioned to SNL/CA waste. A larger portion could be assigned if was determined that SNL/CA was the cause of the incident. It is assumed that the dollar amount of the SNL/CA liability would be less than 1% of the SNL/CA annual operating budget ($220 million in FY 2006), therefore the consequence is Low.

d. Overall Risk Category

In accordance with the chart above, for a risk with a probability of High, with a Low severity, the risk category is Medium.

5. Site-wide Earthquake Induced Spill or Accident

a. Identification of Risk

Incidents, such as spills and fires are not unknown due to earthquakes at facilities.

b. Probability of Occurrence

Given the recent history, the probability of occurrence is considered Low that an earthquake of sizable magnitude will occur affecting SNL/CA at some time during the lifetime of the SNL/CA facility. A moderate earthquake in 1981 cause significant damage to SNL/CA include minor chemical spillage.

c. Consequence of Occurrence

SNL/CA would be responsible for the on-site clean-up and cost of waste disposal. It is assumed that the dollar amount of the SNL/CA liability would be less than 1% of the SNL/CA annual operating budget ($220 million in FY 2006), therefore the consequence is Low.

d. Overall Risk Category

In accordance with the chart above, for a risk with a probability of Low, with a Medium severity, the risk category is Low.

6. Reduction in Program Funding by 10 - 30%

a. Identification of Risk

SNL is experiencing pressure to reduce expenses for indirect-funded and direct-funded organizations, including Environmental Management. The loss of NW funding for Waste Management has required Waste Management to be a full recovery chargeback program beginning in FY 2008. Because the majority of Waste Management Program expenditures are for labor, a 10 - 30% reduction in funding would significantly impact staffing. A reduction in staffing would result in a reduced level of service to line organizations.

b. Probability of Occurrence

Increasing constraints on site budgets is expected to continue for the next several years. This increasing budget pressure and the likely shortfall in the chargeback recovery makes it probable that the funding for the Waste Management Program will decrease by 10 - 30% from FY 2007 levels is High.

c. Consequence of Occurrence

A 10 - 30% reduction in program funding would result in decreased staffing, training, and purchases. Only those program activities that are required by regulation, Sandia policy, technical work documents, or DOE/NNSA would be conducted. Discretionary training and travel for program staff would be eliminated. Purchases for replacement equipment and equipment repair would be reduced. A reduction in Line training and support would occur. An occurrence could occur as a result Line under compliance and documentation inaccuracies. For these reasons, the consequence of a 10 - 30% reduction in program funding is identified as Medium.

d. Overall Risk Category

In accordance with the chart above, for a risk with a probability of High, with a Medium severity, the risk category is High.

Appendix C: Waste Management Program Quality Significant Purchases Determination

Operated for the U.S. Department of
Energy by Sandia Corporation
Livermore, California 94551-0969

date: April 4, 2006

to: Gary Shamber, 8516
Manager, Environmental Management Department

from: Mark Brynildson, 8516
Waste Management Program Lead

subject: Quality Significant Purchases

1.Program title. Waste Management Program

2. Risk level of the program: The highest risk level was determined to be medium.

3. Types of material/instruments/equipment used in the program:

Chemicals for preserving samples
Chemicals (mineral oil for stabilization of reactive metal powders)
Absorbent (vermiculite, solidisorb, pigs, dikes)
pH probes/paper
Oxidizer test paper
Chlorinated oil test kit
PPE
Communication devices (phones & pagers)
Scales
Barcode Scanners
Compactors
Forklift, forklift charger, drum grabber, straps and slings
Drum Dolly
Waste (radioactive, mixed and hazardous) containers (drums, boxes)
Explosives Magazette
Portable tanks
Secondary containment pallets

Bung wrench
Drum wrench
Torque wrench
Impact wrench
Miscellaneous hand tools
Waste Truck
Pickup truck
HEPA Filters
Geiger counter
WIMS database
Desktop computers and printers

4. Criteria used to evaluate these to determine quality significance:

A potential failure of the items listed was evaluated against corporate quality-significant criteria. It was determined that such a failure:

- Will not cause a significant adverse impact to program cost, schedule, or performance in the event of a failure;
- Will not significantly impact the safe operation of a facility or activity;
- Will not involve the use, handling, or storage of radioactive material or radiation-generating devices, or involve exposure to ionizing radiation;
- Do not relate to the design, analysis, manufacture, or assembly of hardware, equipment, and software for present or future use with radioactive material;
- Will not be used in any safety-significant or safety-critical system, component, or application whose failure could adversely affect people, property, or the environment.

5. Determination on quality significant items: The Hazardous Waste activities of the Waste Management Program does not have any quality significant items. This determination is consistent with the "Quality Significant Items" determination in the Hazardous Waste Operations at SNL/NM.

However, drums and boxes used for Low-Level Radioactive Waste and Mixed Waste are quality significant items and are procured and handled according to Sandia quality significant requirements.

6. Determination on S/CI concerns/issues: The Waste Management Program does have items that have the potential for suspect/counterfeit items that would be of a concern to the program. These items include bolts used in the critical lifting mechanisms of the forklifts.

Appendix D: Waste Management Program Self-Assessment

Self Assessment Report

EMS Waste Management Program SA

Assessment Number: 2328
Assessment Type: Line
Assessment Dates:
09/04/2007 - 12/20/2007

Prepared by:

BRYNILDSON,MARK E.
12/17/2007
Org: 08516
Phone: 9252943150

Section 1 *Executive Summary*

1.1 Who/What was assessed

The annual program self-assessment focused on select Waste Management Business Processes at SNL/CA. The assessment also included the standard review of the web pages and Technical Work Documents and select business process of the SNL/CA Waste Management Program

1.2 Overview of Scope

Business Processes
- Permit renewal process
- Training records process
- Annual sampling process
- WDDR process

Assessment Reviews
- Division Self Assessment Findings
- EP Rep Assessment
- External Assessments

Technical Work Documents Review -
- Standard Operating Procedures
- Operating Procedures
- Administrative Procedures

- Web Pages
- ES&H Manual
- Other

1.3 Why Assessment was performed
Annual Waste Management Self Assessment

1.4 The Assessment resulted in the following:

0 Significant Finding(s)
0 Minor Finding(s)
4 Observation(s)
3 Noteworthy Practice(s)
0 None - Acceptable Practice(s)

Not Specified

1.5 What happens next
Not Specified

1.6 Who to contact if there are questions

Mark Brynildson, Waste Management Program Lead.
mebryni@sandia.gov
925-294-3150

Section 2 *Introduction*

2.1 Background
Annual Waste Management Self Assessment

2.2 Purpose of assessment
The annual program self-assessment focused on select Waste Management Business Processes at SNL/CA. The assessment also included the standard review of the web pages and Technical Work Documents.

2.3 Location(s) Assessed

None

2.4 Planning Documents Reviewed

PHS

TWD

2.5 Scope/Criteria

ES&H » Waste Management » Waste Management Program

Section 3 *Assessment Performance*

3.1 Assessment Team Members

Name
Org.
Role
BRYNILDSON,MARK E.
08516
Lead Assessor

CLARK,MICHAEL ANDREW
08516
Assessor

IRISH,PAMELA LYNN
08516
Assessor

FORD,LEIGHTON
08516
Assessor

OTERI,ROBERT A.
08516
Assessor

3.2 Personnel Interviewed

None

3.3 Documents Reviewed

Document
Number

Description
Revision
Type
Date of Review

SNL/CA Waste Management Program Annual Report
SAND2008-124612461659
SNL/CA Waste Management Program Annual Report

SAND Report
12/17/2007

Notes: Annually updated - revise for permit changes

Measuring and Testing Equipment Calibration
OP472245
Measuring and Testing Equipment Calibration
A
OP472245
12/14/2007

Notes: Created 08/20/2007, reviewed 12/14/2007 no changes required

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Guidelines for Waste Generators at SNL/CA
GN470075
Guidelines for Waste Generators at SNL/CA
G
GN
12/14/2007

Notes: Updated 6/06, transitioning to ES&H Manual Chapter 20 in 2007. 12/07 Reviewed ES&H Manual via website, no Chapter 20 listed in ES&H Manual Contents

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Low Level Radioactive and Mixed Waste Building, Bu
SP485007
Low Level Radioactive and Mixed Waste Building, Building 961
L
SP485007
12/14/2007

Notes: Revised 11/07 - Review 12/07 No changes required

STANDARD OPERATING PROCEDURE FOR THE HAZARDOUS WAS
SP473525
STANDARD OPERATING PROCEDURE FOR THE HAZARDOUS WASTE TREATMENT AND STORAGE FACILITY, BUILDING 9611

C
SP
12/14/2007

Notes: Reviewed 12/07 No changes required, however as an FYI; Title 22 is not listed as a training requirement on the matrix in Section 3.0 Training Qualifications

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Operating the RAM FLAT Compactor
OP472180
Operating the RAM FLAT Compactor
A
OP
12/14/2007

Notes: Reviewed 12/07 Recommended change: Sandy Leo remains on document as author/contact, Sec 1.3 Ownership directs suggestions and improvements to Sandy @ 4-1476. This informations needs to be updated.

Shipment of Hazardous Waste/Hazardous Material fro
OP471636
Shipment of Hazardous Waste/Hazardous Material from Building 9611, the Hazardous Waste Treatment and
E
OP
12/14/2007

Notes: Reviewed 12/07 Recommended change: Attachment 7.2 needs to be updated with the latest version. Observation; throughout the text the word "insure" is used instead of the more grammatically correct "ensure", this is only an observation.

Building 961 Lecs Sump Operation
OP471619
Building 961 Lecs Sump Operation
D
OP
12/14/2007

Notes: Reviewed 12/07 No changes required

Administrative Procedure for Control of Samples by
OP471310
Administrative Procedure for Control of Samples by the Environmental Management Department
F

OP
12/14/2007

Notes: Reviewed 12/07. Recommended changes: Document Release or Change History needs to have the last date corrected. It currently indicates the last update was made 12/18/09; second change, Section 4.4 paragraph 4.4.1.4 needs to be updated to indicate Environmental Management personnel pack the samples for shipment not Shipping and Receiving personnel.

Verification of Laboratory Chemical Analysis Data
OP471613
Verification of Laboratory Chemical Analysis Data
D
OP
12/14/2007

Notes: Reviewed 12/07 No changes required. OP is up for official review 03/08

Management of Low-Level Radioactive and Mixed Wast
OP472236
Management of Low-Level Radioactive and Mixed Waste at SNL/CA
A
OP
12/17/2007

Notes: OP written 02/07 and reviewed 12/17/07, no changes required

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Nonconforming Item Identification and Tracking
OP471125
Nonconforming Item Identification and Tracking
F
OP
12/14/2007

Notes: OP updated 11/20/07, reviewed 12/07, no changes required

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Waste Management Program (SNL/CA) Webpages

Waste Management Program (SNL/CA) Webpages

Webpage
12/18/2007

Notes: All pages are updated.

Management of Environmental Permits at SNL/CA

AP800030
Environmental Permits Administrative Procedure used at SNL/CA
A
Administrative Procedure
TBD

3.4 Definitions

Finding: A statement of fact based on objective evidence documenting an act or condition that does not meet requirements, policies, or procedures required by law, a regulatory agency, DOE, Sandia CPR, or a formally-invoked, site-specific, standard.

Significant Finding:
From self-assessments, any Finding that rate High or Medium in risk level (probability of occurrence and consequence criteria per the Enterprise Risk Management CPR) and requires formal causal analysis, corrective action planning, verification, and entry into CATS.

Additionally, any:
Issues (Findings) from Sandia's Independent Audit and Advisory Services Center;
Findings from internal, independent assessments (e.g., Weapon Quality Assessment.);
Issue identified as a corporate issue through the Corporate Issues Management Process.

Minor Finding: Any Finding from self-assessments that rate Low in risk level (probability of occurrence and consequence criteria per the Enterprise Risk Management CPR).

Observation: A statement of fact based on objective evidence documenting an act or condition that does not violate a requirement but may need improvement.

Noteworthy Practice: A process or condition indicating exceptional or innovative policy, practice, or performance.

None - Acceptable Practice: A process or condition with no observed problems.

Section 4 *Significant Findings*

This Assessment resulted in 0 Significant Finding(s).

Section 5 *Minor Findings*

This Assessment resulted in 0 Minor Finding(s).

Section 6 *Observations*

This Assessment resulted in 4 Observation(s).

Observation No. 1

To make Waste Management Permit required training courses readily available and accurate for auditors a Waste Management personnel Training Matrix was developed to track the Waste Management Facility Part B Permit training requirements. This process was developed and maintained by Robert Oteri, 08516. Process Description: During the course of a year a number of classes must be maintained to fulfill Waste Managements permitted training requirements. Each member of Waste Management must complete these courses to stay in compliance. As the classes are completed, a certificate of completion or completion record is then generated for each course taken. These completion records are then sent to the Waste Management Training Coordinator for input into a training matrix that mirrors the Part B Permit training requirements. The Training Coordinator enters these records into the matrix by the date the course was completed. Once entered, a copy of the matrix is then printed out and sent to the appropriate member of Waste Management. The original matrix is kept on the ESH server under Training Record. Transient Out-Of-Compliance conditions are known to occur on an occasional basis. In order to assure that all Permit and Corporate required training is accurate each member of Waste Management must maintain his/her own training and insure that Certificates of Completions (if required) are turned into the Training Coordinator in timely manner. If this does not occur, an Out-Of-Compliance situation could result and a finding could be issued by any internal or external auditor. Since corporate required training is maintained in the TEDS system, Waste Management personnel should also complete their corporate required training and provide the required documentation prior to training expiration dates to maintain their training appropriately.

Trending Code: Training and Qualification

Result Location(s):

None

Result Criteria: ES&H » Waste Management » Waste Management Program

Observation No. 2

Annual Sampling Process used to verify the standard waste streams was assessed. This focused on a review of the sampling process described in the Waste Management Technical Work Documents. The Technical Work Document detailing the Annual Sampling Process is located in the Operating Procedures (OP471787) Titled: Hazardous Waste Operations at SNL/CA. The information regarding the technical process of the sampling event is correct and up-to-date. Minor updates to the OP will improve the document in section 4.4.

Trending Code: Work Processes

Result Location(s):

None

Result Criteria: ES&H » Waste Management » Waste Management Program

Observation No. 3

All but one Division and EP Rep Waste Management self assessment findings cite failure to "Properly store and label all hazardous waste. In CA the total time hazardous waste can be accumulated at the satellite accumulation area is one year. [MN471001-19A] [CCR-Title 22-66262.34(e)]". These surveillance processes to uncover these problems in the Line give some assurance the site can minimize these issues but additional or revised training in ENV112CA might help to minimize the Line non-conformances to waste regulations.

Trending Code: Work Processes

Result Location(s):

None

Result Criteria: ES&H » Waste Management » Waste Handling

Observation No. 4

In an attempt to make shipments of hazardous waste from the 9611 HWTSF more efficient a new method for approving finished drums of waste was utilized during the waste accumulation period beginning in mid-July of 2007. Previous to this accumulation all hazardous waste drums stored in the 9611 HWTSF would be represented by a temporary paper label. The final Zebra thermal drum label would be generated during final drum approval around a week before the shipment. Under the new model drums that were completed and finished were approved immediately and the final drum paperwork was printed and affixed to the drum. This allowed the facility staff to complete many tasks during the accumulation that were normally reserved for the week before a shipment Condition as Noted: During the accumulation of waste at the 9611 HWTSF finalizing and printing drum information as the drums were finished saved time and labor and made the shipment preparations more manageable. The number of drums prepared and shipped per accumulation cycle averages between 90 and 130 and each drum requires a certain amount of time to finalize, from the accumulation phase to the shipment phase. Having some of the drums prepared in advance with the final paperwork and labels cut down dramatically on the time needed to prepare the complete load for shipment. Recommendations: In order to prevent duplicate Zebra thermal label printing drums should not be approved until they are closed to accumulation. Addition of waste to the drum may require additional codes to be added on the label and additional labels to be printed. This is costly and inefficient. If these codes are left off the label during shipment the drum would be inconsistent with the Hazardous Waste Manifest. A good system for tracking which drums are finally approved and printed must be maintained to prevent drums from being mislabeled before the final shipment.

Trending Code: Work Processes

Result Location(s):

None

Result Criteria: ES&H » Waste Management » Waste Handling

Section 7 *Noteworthy Practices*

This Assessment resulted in 3 Noteworthy Practice(s).

Noteworthy Practice No. 1

A new (10/23/2007) Administrative Procedure, AP800030 Management of Environmental Permits at SNL/CA was authored by Robert Holland, 08516, that provides formality and department-wide consistency for the management of environmental permits within the Environmental Management Department, 08516.

Result Location(s):

None

Result Criteria: ES&H » Waste Management » Waste Management Program

Noteworthy Practice No. 2

The Waste Description Disposal Request, or WDDR, is an application that coordinates hazardous waste characterization, pick up, tracking and disposal. An ENV112CA trained hazardous waste generator enters the web-based WDDR site when they begin waste accumulation. The generator will enter the necessary location and characterization information and is this information is used to produce the Hazardous Waste Tag for accumulation. Once accumulation is complete the generator will re-label the waste and submit the WDDR to Waste Management for processing. The submitted WDDR is reviewed by Waste Management and a Waste Identification (WID) is assigned to it. During a waste pick up Waste Management personnel inspect the waste for accuracy based on what the generator submitted via the WDDR. The waste is safely transported back to the Waste Facility for processing. Processed packages are then prepared for shipment and off-site disposal. Effective Aspects: One benefit to the on-line process, compared to the previous carbon-copy paper tag process, enhanced automation. The previous system relied on a multi-colored carboy-copy waste tag to track accumulation, pick up, packaging and shipment. The record keeping involved in this method was very extensive and as with any operation involving handwriting the tags were sometimes difficult to read and understand. The

WIMS/WDDR system keeps all necessary records electronically and relocating them at a later date is quick and easy. The WIMS/WDDR system allows the Waste Management personnel responsible for waste processing to understand to a much higher degree what they are to pick up at the generator location. The waste generator is more effectively guided through the multitude of options on the WDDR form. The information necessary to properly characterize the waste is present when the WDDR is submitted. Another aspect of the WDDR/WIMS system that is very effective is the tracking ability it affords the Waste Management group. Reports can be generated to research waste that needs to be submitted to avoid surpassing accumulation time limits. Waste generators can also use these reports to track what they have generated. The comprehensive integration of all aspects of Hazardous Waste Management into the WDDR/WIMS system allows for more effective and efficient operations. The WIMS/WDDR is accessible by all personal in Waste Management. Data can be reviewed by several people without having to print any paperwork and this prevents costly duplication of work and paper. Items to Improve: The WDDR/WIMS system is located on a server that is operational only in the Sandia SRN computer network. This precludes Foreign National employee□s from gaining access to WDDR system. Typically the employee has to seek out a coworker that has access to the system to complete the WDDR form but this can be difficult and inefficient from an operations standpoint. This issue may be resolved when the WIMS/WDDR system are redeveloped in the coming years. As is the case with most computer applications there are network outages and glitches from time to time that cause service and production lapses. These lapses are infrequent and non-intrusive to operations. There is no way to prevent such occurrences completely, but there are personnel involved in the maintenance of this system that are dedicated to keeping it online and working properly. This system is extremely automated and this make's SNL/CA very dependent on it. If there was a catastrophic event that interrupted access to the WIMS/WDDR system it would essentially prevent the submitting, picking up, packaging and shipment of waste from SNL/CA. A contingency plan should be considered for this type of event.

Result Location(s):

None

Result Criteria: ES&H » Waste Management » Other: Waste Description Disposal Request Process

Noteworthy Practice No. 3

The Waste Management Program was audited by CA EPA/DTSC, the Waste Management's principal regulator on May 31, 2007 as required by regulation. As a result of the inspection, no violations of hazardous waste laws, regulations, and requirements were discovered. The final audit report was very complementary of the Waste Management Program at SNL/CA and auditor considers it a model program.

Result Location(s):

None

Result Criteria: ES&H » Waste Management » Waste Management Program

Section 8 *None - Acceptable Practices*

This Assessment resulted in 0 None - Acceptable Practice(s).

Section 9 *Improvement Action Details*

Observation No. 1

To make Waste Management Permit required training courses readily available and accurate for auditors a Waste Management personnel Training Matrix was developed to track the Waste Management Facility Part B Permit training requirements. This process was developed and maintained by Robert Oteri, 08516. Process Description: During the course of a year a number of classes must be maintained to fulfill Waste Managements permitted training requirements. Each member of Waste Management must complete these courses to stay in compliance. As the classes are completed, a certificate of completion or completion record is then generated for each course taken. These completion records are then sent to the Waste Management Training Coordinator for input into a training matrix that mirrors the Part B Permit training requirements. The Training Coordinator enters these records into the matrix by the date the course was completed. Once entered, a copy of the matrix is then printed out and sent to the appropriate member of Waste Management. The original matrix is kept on the ESH server under Training Record. Transient Out-Of-Compliance conditions are known to occur on an occasional basis. In order to assure that all Permit and Corporate required training is accurate each member of Waste Management must maintain his/her own training and insure that Certificates of Completions (if required) are turned into the Training Coordinator in timely manner. If this does not occur, an Out-Of-Compliance situation could result and a finding could be issued by any internal or external auditor. Since

corporate required training is maintained in the TEDS system, Waste Management personnel should also complete their corporate required training and provide the required documentation prior to training expiration dates to maintain their training appropriately.

Result Criteria: ES&H » Waste Management » Waste Management Program

Part I - Improvement Action Report (IAR)

Reference Identification No:
#2328
Improvement Action Request No:
#2328-O1-IA1
Issue Date:
TBD
Type:
Further Action Required
Owner
Name: BRYNILDSON,MARK E.
Date: 01/02/2008

Assessee Mgr.
Name: TBD
Organization: TBD

Assigned due date:
01/02/2008
Estimated completion date:
03/01/2008
Actual completion date:
TBD
Comments:
None
Improvement action:
On an on-going basis , the Environmental Management Department Manager and the Waste Management Program Lead will remind personnel in department and program meetings to maintain their training in a compliant manner. The Training Coordinator will also report impending non-compliant situations to the department manager. These notifications will be relayed to personnel to ensure compliance can be achieved prior to the training expiration date.

Name of manager or Delegate:
TBD

Part II - Improvement Action Action Verification (IAV)

Actions taken to verify satisfactory completion:
TBD

Evaluation of improvement actions (satisfactory completion, not satisfactory / why):
TBD

Verified by:
TBD
Date of verification:
TBD

Observation No. 2

Annual Sampling Process used to verify the standard waste streams was assessed. This focused on a review of the sampling process described in the Waste Management Technical Work Documents. The Technical Work Document detailing the Annual Sampling Process is located in the Operating Procedures (OP471787) Titled: Hazardous Waste Operations at SNL/CA. The information regarding the technical process of the sampling event is correct and up-to-date. Minor updates to the OP will improve the document in section 4.4.

Result Criteria: ES&H » Waste Management » Waste Management Program

Part I - Improvement Action Report (IAR)

Reference Identification No:
#2328
Improvement Action Request No:
#2328-O2-IA1
Issue Date:
TBD
Type:
Further Action Required
Owner
Name: FORD,LEIGHTON
Date: 01/02/2008
Assessee Mgr.
Name: TBD
Organization: TBD
Assigned due date:
01/02/2008
Estimated completion date:
04/01/2008

Actual completion date:
TBD
Comments:
None
Improvement action:
OP471787 will be revised to update section 4.4 to reflect minor changes in waste generating operations at SNL/CA. This includes removing references to the printed circuit lab shutdown since this OP was last revised.
Name of manager or Delegate:
TBD

Part II - Improvement Action Action Verification (IAV)

Actions taken to verify satisfactory completion:
TBD

Evaluation of improvement actions (satisfactory completion, not satisfactory / why):
TBD

Verified by:
TBD
Date of verification:
TBD

Observation No. 3

All but one Division and EP Rep Waste Management self assessment findings cite failure to "Properly store and label all hazardous waste. In CA the total time hazardous waste can be accumulated at the satellite accumulation area is one year. [MN471001-19A] [CCR-Title 22-66262.34(e)]". These surveillance processes to uncover these problems in the Line give some assurance the site can minimize these issues but additional or revised training in ENV112CA might help to minimize the Line non-conformances to waste regulations.

Result Criteria: ES&H » Waste Management » Waste Handling

There are no Improvement Actions

Observation No. 4

In an attempt to make shipments of hazardous waste from the 9611 HWTSF more efficient a new method for approving finished drums of waste was utilized during the waste accumulation period beginning in mid-July of 2007. Previous to this accumulation all hazardous waste drums stored in the 9611 HWTSF would be represented by a temporary paper label. The final Zebra thermal drum label would be generated during final drum approval around a

week before the shipment. Under the new model drums that were completed and finished were approved immediately and the final drum paperwork was printed and affixed to the drum. This allowed the facility staff to complete many tasks during the accumulation that were normally reserved for the week before a shipment Condition as Noted: During the accumulation of waste at the 9611 HWTSF finalizing and printing drum information as the drums were finished saved time and labor and made the shipment preparations more manageable. The number of drums prepared and shipped per accumulation cycle averages between 90 and 130 and each drum requires a certain amount of time to finalize, from the accumulation phase to the shipment phase. Having some of the drums prepared in advance with the final paperwork and labels cut down dramatically on the time needed to prepare the complete load for shipment. Recommendations: In order to prevent duplicate Zebra thermal label printing drums should not be approved until they are closed to accumulation. Addition of waste to the drum may require additional codes to be added on the label and additional labels to be printed. This is costly and inefficient. If these codes are left off the label during shipment the drum would be inconsistent with the Hazardous Waste Manifest. A good system for tracking which drums are finally approved and printed must be maintained to prevent drums from being mislabeled before the final shipment.

Result Criteria: ES&H » Waste Management » Waste Handling

There are no Improvement Actions